

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Frank A. Skraly and Martha Sholl

Serial No.: 09/909,574

Art Unit: 1652

Filed: July 20, 2001

Examiner: Yong D. Pak

For: *PRODUCTION OF POLYHYDROXYALKANOATES FROM POLYOLS*

Assistant Commissioner for Patents  
Washington, D.C. 20231

**RESPONSE TO RESTRICTION REQUIREMENT**

Sir:

Responsive to the Office Action mailed on September 23, 2002, please consider the following remarks. It is believed that no fee is required with this submission. However, should a fee be required, the Commissioner is hereby authorized to charge the fee to Deposit Account No. 50-1868.

**The Restriction Requirement**

In the Office Action mailed on September 23, 2002, the 21 claims were divided into four groups.

Group I, claims 1-10, drawn to a method of producing polyhydroxyalkanoates by providing various diols to be converted into hydroxyalkanoates. (Class 435, subclass 146)

Group II, claims 11-19, drawn to a composition comprising a polyhydroxyalkanoate copolymer with various comonomers. (Class 560, subclass 1)

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Group III, claim 20, drawn to a method of improving a biological system for making polyhydroxyalkanoates. (Class 435, subclass 146)

Group IV, claim 21 drawn to a DNA fragment encoding a diol oxidoreductase and an aldehyde dehydrogenase producing various hydroxyalkanoates. (Class 536, subclass 23.2)

In response, the Applicants elect Group I, claims 1-10, with traverse.

The Restriction Requirement is Incomplete

It is expressly stated in the MPEP that the "particular reasons relied on by the examiner for holding that the inventions as claimed are either independent or distinct should be concisely stated. A mere statement or conclusion is inadequate. The reasons upon which the conclusion is based should be given." (MPEP 816).

In the Office Action mailed September 23, 2002, the Examiner fails to include reasons why the restricted groups are distinct. As such, the examiner does not meet his burden in establishing grounds for a Restriction Requirement.

Further, the Applicants assert that these claims are related to one inventive concept. Groups I and II are not distinct because they are related as method of making and product made and do not satisfy the test of distinctness. The conditions under which a proper restriction requirement can be made are where: (A) the process as claimed is not an obvious process of making the product and the process as claimed can be used to make another and different products; or (B) the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). The compositions of PHA monomers in Group II possess characteristics

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that are specifically made by the method of Group I. Conversely, the method of Group I will always yield the PHAs described in Group II.

Group III is directed to a method for detecting mutant bacteria with enhanced PHA synthesis from diols. The method for Group III incorporates all the elements of Group I which would otherwise not make these two groups patentably distinct. The method of Group I is necessary to practice the method of Group III. Similarly, the method of Group III will yield PHA monomers in the same way as the method of Group I.

Group IV is related to Group I as process and apparatus for its practice (MPEP 806.05(e)). To properly be restricted, the Examiner must show (A) that the process *as claimed* can be practiced by another materially different apparatus or by hand; or (B) that the apparatus *as claimed* can be used to practice another and materially different process. The method of Group I can not be practiced without the DNA fragments to encode the required enzymes for diol processing. The DNA fragments in Group IV are used to encode the enzymes function to process the diol substrate in the formation of PHAs. The specific monomers are formed as a result of using an appropriate diol precursor as the carbon source for the reaction.

**The Election of Species Requirement is Incomplete**

The Examiner also requires that an election of species be made between the following species: genus of diols, genus of comonomers, and DNA fragments encoding a genus of hydroxyalkanoates. It is impossible to respond to this requirement. The specification states that supplying a particular diol substrate as the sole carbon source will yield a specific PHA (page 4,

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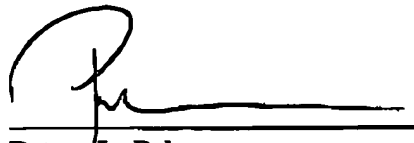
lines 3-8; page 9, line 17-18). For example, use of 1,4-butanediol will be used to synthesize 4-hydroxybutyrate. The monomer is dependent on the choice of diol used as a carbon source.

Further, the DNA fragments do not encode a genus of hydroxyalkanoates. The DNA fragments encode **two enzymes**, diol oxidoreductase, and an aldehyde dehydrogenase, which are necessary for PHA synthesis. These two enzymes can produce various hydroxyalkanoate monomers depending on which substrate is supplied as a carbon source. It is impossible to elect a species in this genus, as **there is no genus**.

Applicants elect 1,4-butanediol which will be used to synthesize 4-hydroxybutyrate.

Allowance of claims 1-21 is respectfully solicited.

Respectfully submitted,



Patrea L. Pabst  
Reg. No. 31,284

Date: October 23, 2002  
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**MESSAGE**Applicant: **Frank A. Skraly and Martha Sholl**Serial No.: **09/909,574**Art Unit: **1652**Filed: **July 20, 2001**Examiner: **Yong D. Pak**For: **PRODUCTION OF POLYHYDROXYALKANOATES FROM POLYOLS**

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<b>TRANSMITTAL FORM</b>  (to be used for all correspondence after initial filing)	Application Number	09/909,574
	Filing Date	July 20, 2001
	First Named Inventor	Frank A. Skraly
	Group Art Unit	1652
	Examiner Name	Yong D. Pak
Total Number of Pages in This Submission	Attorney Docket Number	MBX 039

**ENCLOSURES** (check all that apply)

<input checked="" type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input checked="" type="checkbox"/> Amendment / Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts/ Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Assignment Papers (for an Application) <input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____	<input type="checkbox"/> After Allowance Communication to Group <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please Identify below): Return post-card.
Remarks		

**SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT**

Firm or Individual name	Patricia L. Pabst, Reg. No. 31,284 Suite 2000, One Atlantic Center, 1201 West Peachtree Street, N.E.; Atlanta, GA 30309-3400	Holland & Knight LLP
Signature		
Date	October 23, 2002	

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**FEE TRANSMITTAL  
for FY 2002**

Patent fees are subject to annual revision.

☒ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$)-0-

**Complete if Known**

Application Number	09/909,574
Filing Date	July 20, 2001
First Named Inventor	Frank A. Skraly
Examiner Name	Yong D. Pak
Group Art Unit	1652
Attorney Docket No.	MBX 039

**METHOD OF PAYMENT (check all that apply)**☐ Check ☐ Credit card ☐ Money Order ☐ Other ☒ None☐ Deposit Account:Deposit Account Number  
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**FEE CALCULATION****1. BASIC FILING FEE**

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
101	740	201	370	Utility filing fee	
106	330	206	165	Design filing fee	
107	510	207	255	Plant filing fee	
108	740	208	370	Reissue filing fee	
114	160	214	80	Provisional filing fee	

SUBTOTAL (1) (\$)

**2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE**

Total Claims		Extra Claims		Fee from below		Fee Paid	
Independent Claims	21 - 21	0	x	0	=	0	
Multiple Dependent	13 - 13	0	x	0	=	0	

Large Entity		Small Entity		Fee Description	Fee Paid
Fee Code	Fee (\$)	Fee Code	Fee (\$)		
103	18	203	9	Claims in excess of 20	
102	84	202	42	Independent claims in excess of 3	
104	280	204	140	Multiple dependent claim, if not paid	
109	84	209	42	** Reissue independent claims over original patent	
110	18	210	9	** Reissue claims in excess of 20 and over original patent	

SUBTOTAL (2) (\$)-0-

\*or number previously paid, if greater. For Reissues, see above

**FEE CALCULATION (continued)****3. ADDITIONAL FEES**

Large Entity Small Entity

Fee Code	Fee (\$)	Fee Code	Fee (\$)	Fee Description	Fee Paid
105	130	205	65	Surcharge - late filing fee or oath	
127	60	227	25	Surcharge - late provisional filing fee or cover sheet	
139	130	139	130	Non-English specification	
147	2,520	147	2,520	For filing a request for ex parte reexamination	
112	920*	112	920*	Requesting publication of SIR prior to Examiner action	
113	1,840*	113	1,840*	Requesting publication of SIR after Examiner action	
115	110	215	55	Extension for reply within first month	
116	400	216	200	Extension for reply within second month	
117	820	217	400	Extension for reply within third month	
118	1,440	218	720	Extension for reply within fourth month	
128	1,960	228	980	Extension for reply within fifth month	
119	320	219	160	Notice of Appeal	
120	320	220	160	Filing a brief in support of an appeal	
121	280	221	140	Request for oral hearing	
138	1,310	138	1,310	Petition to institute a public use proceeding	
140	110	240	55	Petition to revive - unavoidable	
141	1,280	241	640	Petition to revive - unintentional	
142	1,280	242	640	Utility issue fee (or reissue)	
143	480	243	230	Design issue fee	
144	620	244	310	Plant issue fee	
122	130	122	130	Petitions to the Commissioner	
123	50	123	50	Processing fee under 37 CFR 1.17(q)	
128	180	128	180	Submission of Information Disclosure Sheet	
581	40	581	40	Recording each patent assignment per property (times number of properties)	
146	740	246	370	Filing a submission after final rejection (37 CFR § 1.129(a))	
149	740	249	370	For each additional invention to be examined (37 CFR § 1.129(b))	
179	740	279	370	Request for Continued Examination (RCE)	
169	800	169	800	Request for expedited examination of a design application	

Other fee (specify)

\*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$)-0-

**SUBMITTED BY**

Name (Print/Type) Patrea L. Pabst

Registration No.  
(Attorney/Agent)

31,284

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(404) 817-8473

Signature

Date

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